



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/594,692	05/31/2007	Xavier Briand	20010.0007USWO	9463
52835 7590 12/08/2009 HAMRE, SCHUMANN, MUELLER & LARSON, P.C. P.O. BOX 2902 MINNEAPOLIS, MN 55402-0902				
EXAMINER				
FLOOD, MICHELE C				
ART UNIT		PAPER NUMBER		
1655				
MAIL DATE		DELIVERY MODE		
12/08/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/594,692

**Applicant(s)**

BRIAND ET AL.

**Examiner**

MICHELE FLOOD

**Art Unit**

1655

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 September 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 6-8, 11 and 18-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6-8, 11 and 18-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-06)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 18, 2009 has been entered.

Acknowledgment is made of the cancellation of Claims 12-17 and the addition of newly submitted Claims 18-21.

**Claims 6-8, 11 and 18-21 are under examination.**

### ***Response to Arguments***

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6-8, 11 and 18-21, as amended, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Newly applied.

Claim 6 recites the limitation "wherein the administration" in line 6. There is insufficient antecedent basis for this limitation in the claim. Applicant may overcome the rejection by replacing "administration" with administering.

Claim 8 recites the limitation "the roots" in line 3. There is insufficient antecedent basis for this limitation in the claim. Applicant may overcome the rejection by deleting "the".

Regarding Claim 8, the phrase "when applied in liquid form via the leaves, in nutritive solution for the roots or in solution for seed or post-harvest treatment" renders the claim indefinite because it is unclear as to whether the limitations following the phrase are part of the claimed invention. A claim should be drafted to include a positive statement. Applicant may overcome the rejection by replacing the claim with The method as claimed in claim 6, wherein the effective amount is from 0.1 to 100 g per liter; and wherein the administering is in liquid form via the leaves, in nutritive solution for roots or in solution for seed or post-harvest treatment, for example.

The metes and bounds of Claim 8 are rendered indefinite by the limitation "when applied . . . in solution for seed or post-harvest treatment" because a seed is not a living plant and a post-harvest plant is not a living plant, *per se*. This rejection is based on the fact the preamble of Claim 6 (from which Claim 8 directly depends upon) recites "A method for activating, *in vivo*, plant defense and resistance reactions against biotic or abiotic stresses, comprising administering, to living plants, an effective amount of (1) ulvans from green algae of the genus *Ulva* or *Enteromorpha*, or (2) a reaction product obtained from the hydrolysis or enzymatic hydrolysis of the ulvans of (1)". Thus, the limitation as set forth in Claim 8 is not consistent with the scope of Claim 6, since seeds are not considered a whole living plant and only a part thereof; and, a post-harvest plant is not necessarily either a whole living plant or a living plant, *per se*. Accordingly, the

subject matter to which Applicant seeks patent protection is rendered vague and indefinite.

Each of Claims 8, 18, 19 and 20 recites the limitation "wherein the effective amount given to the plant". There is insufficient antecedent basis for this limitation in the claim.

Claim 18 recites the limitation "wherein the effective amount given to the plants" in line 1. There is a lack of clear antecedent basis for this limitation in the claim, since there is no 'effective amount given [emphasized] given to the plants', *per se*. Applicant may overcome the rejection by replacing the limitation with wherein the effective amount is 1 g per liter, for example.

Regarding Claim 19, the phrase "when applied in solid form in pulverulent or granulated products" renders the claim vague and indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. A claim should be drafted to include a positive statement. Moreover, it is uncertain if a word is missing or a wrong word is entered. Perhaps, Applicant may overcome the rejection by replacing the claim with The method as claimed in claim 6, wherein the effective amount is from 10 to 1000 g per hectare; and wherein the administering is in the form of a solid, a pulverulent or granulated product, for example.

Claim 20 recites the limitation "wherein the effective amount given to the plants" in line 1. There is a lack of clear antecedent basis for this limitation in the claim, since there is no 'effective amount given [emphasized] given to the plants', *per se*. Applicant

may overcome the rejection by replacing the limitation with wherein the effective amount is 200 g per hectare, for example.

Claim 21 recites the limitation "wherein the administration" in line 5. There is insufficient antecedent basis for this limitation in the claim. Applicant may overcome the rejection by replacing "administration" with administering.

All other cited claims depend directly or indirectly from rejected claims and are, therefore, also, rejected under U.S.C. 112, second paragraph for the reasons set forth above.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 6-8 and 18-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Lienart (A\* or N; A\* referred to herein for convenience). Newly applied as necessitated by amendment.

Applicant claims a method for activating, *in vivo*, plant defense and resistance reactions against biotic or abiotic stresses, comprising administering, to living plants, an effective amount of (1) ulvans from green algae of the genus *Ulva* or *Enteromorpha*, or (2) a reaction product obtained from the hydrolysis or enzymatic hydrolysis of the ulvans

of (1), wherein the administration in the plants is effected under *in vivo* conditions.

Applicant further claims the method as claimed in claim 6, wherein the administering to the plants is carried out via leaves or via roots; and, wherein the effective amount given to the plants is from 0.1 g to 100 per liter when applied in liquid form via the leaves, in nutritive solution for the roots or in solution for seed or post-harvest treatment.

Applicant further claims the method as claimed in claim 8, wherein the effective amount given to the plants is 1 g per liter. Applicant further claims the method as claimed in claim 6, wherein the effective amount given to the plants is from 10 to 1000 g per hectare when applied in solid form in pulverulent or granulated products. Applicant further claims the method as claimed in claim 19, wherein the effective amount given to the plants is 200 g per hectare.

Applicant claims a method for activating, *in vivo*, plant defense and resistance reactions against biotic stresses, comprising administering, to living plants, an effective amount of (1) ulvans from green algae of the genus *Ulva* or *Enteromorpha*, or (2) a reaction product obtained from the hydrolysis or enzymatic hydrolysis of the ulvans of (1), wherein the administration in the plants is effected under *in vivo* conditions.

Lienart teaches a method for activating, *in vivo*, plant defense and resistance reactions against biotic or abiotic stresses, comprising administering, to living plants, an effective amount of (1) ulvans from green algae of the genus *Ulva* or *Enteromorpha*, or (2) a reaction product obtained from the hydrolysis or enzymatic hydrolysis of the ulvans of (1), wherein the administration in the plants is effected under *in vivo* conditions by foliar spraying of leaves. See [0101], [[0020; defense and resistance against abiotic

stresses], [0042-0043; defense and resistance against biotic stresses], [0111; defense and resistance against abiotic stresses], and [0115; defense and resistance against biotic stresses], for example. at [0116], Lienart teaches that the products may be administered in solid form (in particular powder, granules, and pellets), or in liquid form (in particular aqueous solution), combined or not combined with other agricultural products. Routes of administration of the products are via foliar spraying of leaves or soil irrigation. See [0110] and [0215], for example.

Each of the references anticipates the claimed subject matter.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of



the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 6-8, 11 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lienart (A\* or N; A\* referred to herein for convenience) in view of Costa (B\*). Newly applied as necessitated by amendment.

Applicant's claimed invention of Claims 6-8 and 18-20. Applicant further claims the method as claimed in claim 6, wherein the nutritive solution provided drop wise to the roots or hydroponics are utilized to provide the nutritive solution to the roots.

The teachings of Lienart are set forth above. Lienart teaches the instantly claimed method except for wherein the nutritive solution is provided drop wise to the roots or hydroponics are utilized to provide the nutritive solution to the roots. However, it would have been obvious to one of ordinary skill in the art to add the nutritive solution taught by Lienart drop wise to roots or via hydroponics to the roots to provide the instantly claimed method because at the time the invention was made it was well known in the art that nutrient solutions could be added drop wise to roots; and that nutrient solutions could be added drop wise to hydroponics for the delivery of nutrients, such as the products of Lienart, to the roots of plants made evident by the teachings of Costa. Since Lienart beneficially taught that the claim-designated ingredients could be

administered in a nutritive solution by soil irrigation and thereby to the roots of a plant; and, since Costa beneficially taught that hydroponics could be used to administer nutrients in solution via roots to plants, the artisan of ordinary skill would have had a reasonable expectation that the modification as disclosed by Applicant would be successful because it would be predictable that the nutrient solution of Lienart provided drop wise or provided as a nutrient solution via hydroponics to the roots would behave similarly to root tissues treated by irrigation to elicit an activation of plant defense and resistance reactions against biotic or abiotic stresses.

Accordingly, the claimed invention was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, especially in the absence of evidence to the contrary.

\* Applicant is advised that the cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site ([www.uspto.gov](http://www.uspto.gov)), from the Office of Public Records and from commercial sources. Should you receive inquiries about the use of the Office's PAIR system, applicants may be referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHELE FLOOD whose telephone number is (571)272-0964. The examiner can normally be reached on 7:00 am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terry McKelvey can be reached on 571-272-0775. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michele Flood  
Primary Examiner  
Art Unit 1655

MCF  
December 6, 2009

/Michele Flood/  
Primary Examiner, Art Unit 1655